

What is claimed is

1. A repeater monitoring system for enlarging service areas based on a wireless communications network, comprising:

5 a repeater monitoring apparatus for selecting waves transferred from repeaters, and analyzing the waves by using programs, and transmitting analyzed results;

an SMS center for receiving the analyzed results from the repeater monitoring apparatus, and transmitting the analyzed results;

10 a repeater management server for receiving the analyzed results from the SMS center and managing a plurality of repeaters; and

a storage apparatus for saving the analyzed results received from the repeater management server.

15 2. The system of the claim 1, the analyzed results received from the repeater monitoring apparatus are information of short message type.

20 3. The system of claim 1 or claim 2, the analyzed result comprises at least one selected from the group consisting of an analysis time, an identification of a terminal manufacturing company corresponding to a mobile communications company(SID), a telephone exchange identification used by the repeater(NID), a noise measurement

(PILOT\_PN), a received message signal strength indicator(RSSI), a signal-to-interference rate( $E_c/I_o$ ), a transmitted message signal strength indicator (TX\_PWR).

4. The system of claim 1, the SMS center further comprises the means for  
5 searching and selecting a short message including the analyzed results from the plural short messages.

5. The system of the claim 1, the repeater management server modifies an  
analysis result transmission period of the repeater monitoring apparatus through the  
10 communications network.

6. The system of the claim 5, the communications network is a mobile  
communications network.

15 7. The system of the claim 1, the repeater monitoring apparatus comprises an incoming terminal and an incoming line for drawing external power sources, the transformer for adjusting the power sources.

8. The system of the claim 7, the power sources transformed by the  
20 transformer is at least one selected from the group consisting of 12V, 7.2V, 3.6V.

9. The system of the claim 1, the repeater monitoring apparatus further comprises the external wave cover case for connecting the repeater with itself.

10. A repeater monitoring apparatus for enlarging service areas based on a wireless communications network, the apparatus comprising:

a storage device; and

a processor coupled to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to receive electronic waves sent out from

a repeater;

analyze the received electronic waves;

transmit an analysis result to a repeater management server.

11. The apparatus of the claim 10, the analysis result comprises at least one selected from the group consisting of an analysis time, an identification of a terminal manufacturing company corresponding to a mobile communications company(SID), a telephone exchange identification used by the repeater(NID), a noise measurement (PILOT\_PN), a received message signal strength indicator(RSSI), a signal-to-interference rate( $E_c/I_o$ ), a transmitted message signal strength indicator (TX\_PWR)

12. A repeater monitoring apparatus for enlarging the service areas based on a wireless network, the apparatus comprising:

a storage device; and

a processor coupled to the storage device,

the storage device storing a program for controlling the processor; and

the processor operative with the program to receive analysis results from the repeater monitoring apparatus;

save the received analysis results to a storage apparatus;

transmit the received analysis results to a manager's terminal.

13. The apparatus of the claim 12, the processor further operates with the program to compile statistics about the analysis results according to the fixed conditions.

14. A method for certificating a repeater monitoring apparatus comprising the steps of:

determining whether or not the repeater monitoring apparatus is in operation;

transmitting a certification request of the repeater monitoring apparatus to a repeater management server when the repeater monitoring apparatus is in operation;

receiving a certification confirm information from the repeater management server.

15. The method of the claim 14, the communications network is a mobile communications network.

16. The method of the claim 14, the certification request comprises at least one selected from the group consisting of an identification of a terminal manufacturing company corresponding to a mobile communications company(SID), a telephone exchange identification used by the repeater(NID), a noise measurement (PILOT\_PN), a latitude of the repeater monitoring apparatus(BASE\_LAT), a longitude of the repeater monitoring apparatus(BASE\_LONG).

17. A method for setting up a report period of a repeater monitoring apparatus comprising the steps of:

receiving a fixing request comprising a basic value for setting up a report period of a particular repeater monitoring apparatus from a repeater management server;

saving the received basic value as report period of the repeater monitoring apparatus;

transmitting a fixing result to a repeater management server.

18. The method of the claim 17, the communications network is a mobile communications network.

19. The system of the claim 17, the fixing request comprises at least one selected from the group consisting of a report period, a sequential number of the fixing request.

20. A method for transmitting a analysis result of a repeater monitoring apparatus comprising the steps of:

selecting electronic waves sent out from repeaters;

setting up a report period for reporting an analysis result of the electronic waves;

analyzing the electronic waves by using fixed programs according to the report period;

transmitting an analyzed result to a repeater management server.

21. The method of the claim 20, further comprising the steps of:

receiving a fixing request comprising a basic value for setting up a report period of the repeater monitoring apparatus from a repeater management server;

saving the received basic value as a report period of the repeater monitoring apparatus.

22. The method of the claim 20, the communications network is a mobile communications network.

23. The method of the claim 20, the analysis result comprises at least one selected from the group consisting of an analysis time, an identification of a terminal manufacturing company corresponding to a mobile communications company(SID), a telephone exchange identification used by the repeater(NID), a noise measurement
- 5 (PILOT\_PN), a received message signal strength indicator(RSSI), a signal-to-interference rate( $E_c/I_o$ ), a transmitted message signal strength indicator (TX\_PWR).